

REMARKS

Applicants request favorable reconsideration and allowance of the subject application in view of the preceding amendments and the following remarks.

Claim 14 is the sole claim presented for consideration. Claim 14 has been amended to clarify features of the subject invention. Support for these changes can be found in the original application, as filed. Therefore, no new matter has been added.

Applicant request favorable reconsideration and withdrawal of the rejections set forth in the above-noted Office Action.

Claim 14 was rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,404,473 to Kaneko et al. Claim 14 was also rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,264,714 to Trausch. Applicants submit that the cited art, whether taken individually or in combination, does not teach or suggest many features of the present invention as previously recited in claim 14. Therefore, these rejections are respectfully traversed. Nevertheless, Applicants submit that independent claim 14, as presented, amplifies the distinctions between the present invention and the cited art.

Independent claim 14 recites a method for manufacturing a substrate having a fine line on a substrate face. The method includes a fine-line forming step of forming the fine line on the substrate face, wherein a narrow-width portion is provided at an end portion of the fine line in a longitudinal direction, and the fine line is formed so that a width of the narrow-width portion in a parallel direction to the substrate face is smaller than a width of a portion adjacent to the narrow-width portion, and in a section of the fine line cut in the direction of a normal line on the face

forming the fine line on the substrate, the section comprises a part which is away from the substrate-side-end of the section. A length of a part of the section in the parallel direction to the substrate face is longer than a length of the substrate-side-end of the section in the parallel direction to the substrate face. The fine-line forming step includes (i) a step of providing a photosensitive material onto the substrate, (ii) a step of projecting light from above the substrate onto a predetermined region on the photosensitive material, and (iii) a developing step after the step of projecting light.

Applicants submit that the cited art, whether taken individually or in combination, does not teach or suggest such features of the present invention, as recited in independent claim 14.

The Examiner cites the Kaneko et al. patent as disclosing a display device and an example (Figure 9A) in which the end portion of a wiring line is tapered with a smaller width than the width of an adjacent portion. The tapered wiring line is patterned by exposing a photoresist layer through a photomask, developing the exposed photoresist, and etching the underlying layers using the photoresist as a mask.

In Applicants' view, however, the Kaneko et al. patent merely discloses a liquid crystal display device having a wiring line of a laminated structure over an insulating substrate. The laminated structure includes a first layer made of a first metal layer, and a second layer formed over the first layer and made of a second metal layer having the same principal component as that of the first metal layer, but a different added element and/or a different composition. The first layer has a side end face of a right-tapered shape, whereas the second layer has a side end face set at a right angle or counter-tapered with respect to the substrate face.

To amplify the distinctions between the present invention and the Kaneko et al. patent, Applicants have amended independent claim 14 to include the feature of a section of a fine line cut in a direction of a normal on the face forming the fine line on the substrate having a part which is cut away from the substrate-side-end of the section and having a length of a part of the section in the parallel direction to the substrate face that is longer than the length of the substrate-side-end of the section in the parallel direction to the substrate face.

Applicants submit that the Kaneko et al. patent only discloses a three layer line, with the thickness of the center layer being decreased at its end, but the Kaneko et al. patent fails to teach or suggest at least the features of the present invention recited in independent claim 14 in which a width in a parallel direction to the substrate face of the narrow width portion at the end of the fine line in the longitudinal direction is smaller than the width of the portion adjacent to the narrow width end portion. In addition, independent claim 14 includes a further feature that the section of the fine line cut in the direction of a normal line on the face forming the fine line on the substrate having a part which is away from the substrate-side-end of the section and a length of a part of the section in the parallel direction to the substrate face being longer than the length of the substrate-side-end of the section in the parallel direction to the substrate face. Applicants further submit that the Kaneko et al. patent does not in any manner teach or suggest a variation in cross-sectional length, in the manner of the present invention provided in independent claim 14.

The Examiner relies on the Trausch patent as disclosing a photosensitive layer 12 formed over a pattern metal layer 10 and a glass substrate 9, which is then exposed. After development,

photo-resist structures 14 and 15 are formed. The Examiner considers that the width of the end portion of each structure is smaller than the width of the adjacent portion.

Applicants submit that the Trausch patent merely discloses a process of manufacturing precision flat parts such as mask, templates, and the like, having very small openings therein with high contour details, yet with a substantial material thickness that utilizes a metalized glass carrier having a stencil etched thereon with a negative working photo-resist laminated on it. Exposure of the photo-resist is achieved through the glass so that a maximum intensity of light in the photo-resist occurs at the juncture between the photo-resist and the glass carrier for maximum adhesion. Irregularly-shaped apertures can be generated by selective, varied orientation of the glass carrier during the exposure.

Accordingly, the Trausch patent is directed to forming precise flat parts having apertures formed therein made by forming photo-resist areas (for example, 14 and 15) in a metal plate 16. Applicants submit, however, that the Trausch patent fails to teach or suggest that the photo-resist areas for forming apertures have any variation in width at end portions in the longitudinal direction. Regarding the present invention recited in independent claim 14, Applicants submit that the Trausch patent only discloses forming photo-resist areas such as 7, as shown in Figure 1b, and 14 and 15, as shown in Figure 2c, which have a uniform width in a parallel direction to the substrate face. That patent, therefore, is devoid of any teaching or suggestion of a narrow-width portion provided at an end portion of a fine line in a longitudinal direction, the width in a parallel direction to the substrate face of the narrow-width portion being smaller than a width of a portion adjacent to the narrow-width portion. As a result, Applicants do not see the Trausch

patent as teaching or suggesting at least the feature of the present invention of a narrow-width end portion of a fine line that has a width smaller than the fine line portion adjacent thereto, combined with the feature of a section of a fine line cut in the direction of a normal line on the face forming the fine line on the substrate having a part away from the substrate-side-end of the section with the length in the parallel direction to the substrate face being longer than the length of the substrate-side-end of section in the parallel direction to the substrate face.

For the reasons noted above, Applicants submit that the Kaneko et al. patent and the Trausch patent do not teach or suggest salient features of Applicants' present invention, as recited in independent claim 14.

For the foregoing reasons, Applicants submit that the present invention, as recited in independent claim 14, is patentably defined over the cited art, whether that art is taken individually or in combination.

Applicants further submit that the instant application is in condition for allowance. Favorable reconsideration, withdrawal of the rejections set forth in the above-noted Office Action and an early Notice of Allowance are requested.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010 All correspondence should continue to be directed to our address given below.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Steven E. Warner", is written over a horizontal line.

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